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ABSTRACT

This document describes a project designed to evaluate the training of subject matter teachers in Sweden. The purpose of the project is to acquire information about the training system and to use this knowledge as a base for reform of teacher preparation. The project began in 1970 and is expected to continue through 1975. The first year was devoted to gathering information about science and mathematics teachers. Successive years were devoted to modern language teachers, social science teachers, and Swedish teachers. The final year will consist of an evaluation of the teaching practice term and an evaluation of educational psychology studies. Seven instruments have been developed for utilization in the study. Three of these are questionnaires designed to furnish data about the trainees. A fourth questionnaire examines the attitudes of headmasters toward teacher training. Of the remaining three instruments, two are attitude tests, and one is a test of trainees' knowledge and evaluation of educational psychology. After a general description of the overall project, a summary of the report of the study on teacher training in the subject area of science is presented. (HMD)

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October 1974 Current project 1974:19

Title of project: Qualitative evaluation of teacher training, subject teacher line, KUL-Ä

Project no.: 510

In progress at: The Institute of Education, Linköping School of Education

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Background and purpose

An evaluation of the training of subject teachers (KUL-Ä) has been in progress at Linköping School of Education since 1970. The purpose of this evaluation is to acquire, by various methods, more detailed knowledge of the working of the system and to use the knowledge thus acquired as a foundation for changes within the frames permitted by the system.

In 1972 the evaluation was expanded to include the first two years of teaching service after qualification. This evaluation is being administered within the KULT-Ä project. The organization and activities of the project are illustrated in the figure on the following page.

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Problems

In order to shed light on teacher training from as many different angles as possible, the following background data have been analysed concerning trainee subject teachers:

1. Social circumstances, such as ecological data, migration etc.
2. Parental socio-economic status
3. Previous education, matriculation awards, university merits etc.
4. Teaching experience
5. Degree of vocational decision
6. Expectations concerning teacher training

			KUL-Ä	KULT-Ä
Management	Scientific leader: Prof. S. Marklund Project leader: Ass.Prof Thord Erasmie Miscellaneous: Joint administration			Ass.Prof. K.H. Eriksson Ass.Prof. Thord Erasmie
	Activities	1971-1972	Evaluation of science subjects	
		1972-1973	Evaluation of modern languages	Planning. Group discussions
		1973-1974	Evaluation of social subjects + Swedish	Group discussions. Interview studies of newly qualified teachers
		1974-1975	Evaluation of Linköping and Gothenburg schools of ed: pedagogics and teaching practice	Group discussions. Interview studies and collection of other data
		1975-1976	Autumn term 1975: Summary Conclusion	Activities ut supra
		1976-1977		Synthesis. Evaluation

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The goals of the project are:

to study the extent to which teacher training achieves the targets set for it,

to study the changes occurring during the training process in the attitudes and expectations of trainee teachers,

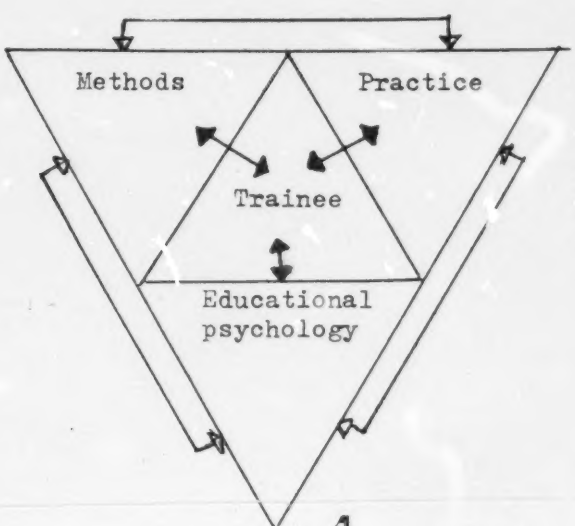
to study the training components that are relevant to the teaching profession in the light of the previous experience of the trainees, their knowledge and their social background,

to investigate the attainability of the established goals under the present system of teacher training,

to provide a foundation on which to determine the respects in which the training system is in need of revision.

The results for prospective teachers of scientific subjects have been reported by Erasmie, May 1972, and by Erasmie and Marklund, June 1974. Cf. Reporting, infra.

Teacher training at schools of education comprises three main sectors: methods, educational psychology and teaching practice. The role of the trainee in the training system is illustrated in the following sketch.



Seen in terms of this model, training can be explained as a process of interaction in which the three components together with trainee's own input produce an effect, the training result.

If we assume an optimum interaction and equality of status between the trainees with regard to previous education, the training effect will in all probability vary according to previous experience and also according to the attitudes that exist concerning the teaching profession.

The following sectors are expected to be significant:

a. the teaching of educational psychology
b. the teaching of methods
c. changes of attitude concerning the teaching profession.

Steering factors and resources

Training effect is dependent on the steering factors and resources present in the school of education system.

The steering factors comprise general definitions of goals as contained in statutes and curricula, official statements and the expectations of society. (Interim report no. 1).

The resources can be defined as:

a. material resources such as teaching aids, premises etc.

b. organizational resources such as form of teaching, size of group, different forms of co-ordination etc.

c. resources of personnel, e. g. teachers, tutors, administrators (training, attitudes, turnover).

The view of training taken by headmasters and directors of studies has been reported in collaboration with the KUL-K project (LHS 1973).

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The steering factors have been analysed from the viewpoint of trainee teachers in special studies of the term at school of education and the term of teaching practice (interim reports 4, 7 and 10).

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Test instruments

The following instruments have been constructed in order to obtain information concerning the various components of teacher training. These instruments were used each term on different groups of trainees.

Name of instrument	Purpose
Questionnaire 1	Furnish data concerning the aptitude of the trainee
Questionnaire 2	Furnish data concerning the trainee's experiences during the theoretical term
Questionnaire 3	Furnish data concerning the trainee's during the teaching practice term
Questionnaire to headmasters	Furnish data concerning the view taken by headmasters of present-day teacher training
Attitude test I	1) Study changes of attitude during the training process, "Statements about education education" (Likert scale)
Attitude test II	2) FLAS, Questionnaire concerning the work situation of teachers (questionnaire)
Educational psychology test	Furnish data concerning the trainee's knowledge and evaluation of the subject

Methods test	Furnish data concerning the trainee's knowledge and evaluation of the subject
English test	Knowledge test (trainees with English as a degree subject, autumn term 1973)

Timetable

The project began in 1970 and is expected to continue until 1975 inclusive. The following trainee populations will be included in this period:

1971-1972	Natural sciences and mathematics
1972-1973	Modern languages
1973-1974	Social subjects and Swedish
1974-1975	Evaluation of teaching practice term
	Evaluation of educational psychology studies

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Remarks

Apart from the instruments specified in the basic plan, the project also includes a series of sub-projects which will be reported ad hoc.

Examples of sub-projects:

Creativity among trainee teachers
Pupils' opinions concerning the trainees' teaching

Results

Interim results have been reported from time to time in the series of publications issued in the course of the project.

The following is a summary of Final Report no. 1 (Erasmie-Marklund, 1974):

This report presents the results of an evaluation of subject

teacher training concerning scientific subjects. The evaluation was undertaken during the school year 1971-1972 as part of the KUL-A project (Qualitative evaluation of the training of subject teachers).

Chapter VI describes the evaluation procedure followed and the instruments used. The evaluation covered both terms of training together with educational psychology and the teaching of methods. A separate study deals with the attitudes of trainee teachers to schools and education.

Chapter VII attempts to answer the questions "Who are the trainees?" and "Why do people train as teachers?"

The results can be generalized as follows:

WHO ARE THE TRAINEES?

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The typical trainee science teacher

- is just over 27 years old
- comes from social class II (parents with elementary schooling)
- is male
- has better matriculation marks than average
- has studied at university for a smaller number of terms than most other students
- has between seven and eight marks in his degree
- has distinctions in one or more subjects

WHY DO PEOPLE TRAIN AS TEACHERS?

The typical trainee science teacher has applied for admission to a school of education because

- he decided to be a teacher at the very start of his subject studies
- he is interested in children and young people
- he is interested in teaching
- he is interested in his subject

- he appreciates the relative independence offered by the profession

The experiences of trainee teachers during their term at school of education are described in chapter VIII. The results of a questionnaire completed by the trainees at the end of the term are summarized on the following page.

The viewpoints expressed by the trainee subject teachers concerning their term at school of education (autumn term 1971 or spring term 1972) can be summerized in the following points, all of which are criticisms of the current training system and thus provide indirect opportunities of change:

1. Insufficient premises are available for leisure hours.

2. The organization of the school of education is too rigid.

3. People do not usually know about the different joint bodies referred to in the school of education statutes.

4. The statutory bodies are insufficient to establish the partnership referred to in the training plan.

5. There is too little joint influence regarding the design and content of training.

6. People want less educational psychology and more methods and practical training.

7. Where educational psychology is concerned, people feel that too little attention has been paid to the detailed items described in the training plan.

8. Educational psychology is felt to have little real bearing on the teaching profession.

9. People do not believe that the various aspects of educational psychology will be of any practical use to them.

10. Educational psychology should be taught through the medium of discussion groups, not by unilateral lecturing.

11. People feel that more instruction should be given on all aspects of teaching methods.

12. Methods are subject-based but also professionally based, so that the knowledge thus acquired is applicable to concrete situations in school.

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Experiences during the teaching practice term in relation to basic training are described in chapter XI.

During the evaluation of the teaching practice term in relation to the sum total of training at the school of education, the following viewpoints were expressed by trainee science teachers admitted in 1971-72:

1. There were too many pupils in the practice classes.

2. Most classes were considered active and tranquil.

3. Pupil welfare activities functioned properly.

4. Most of the problems arising in the classroom are solved by the trainee himself without any assistance from his supervisor.

5. The practical training periods occurring during the term at school of education were a useful preparation for the teaching practice term.

6. Educational psychology studies were of little use during the teaching practice term.

7. Studies concerning the planning of teaching and audio-visual aids were of great value for practical teaching, as were the visits paid to other teachers' lessons.

8. Tutors should be more active and more forthcoming with assistance

A large-scale interview study was carred out to investigate the views of headmasters and directors of studies concerning the training of subject teachers. Chapter X describes the viewpoints expressed concerning:

1. The balance struck between the principal sectors of teacher training.

2. Collaboration between the principal sectors of teacher training.

3. Collaboration between different lines.

4. The planning of training at the school of education.

5. The recruitment and qualifications of teacher trainers.

6. The background of the trainees.

7. The influence exerted on training by different groups and persons.

8. The dissemination of information at the school of education.

9. Training content.

10. Premises and equipment at the school of education.

11. The evaluation of teacher training.

Headmasters and directors of studies would like to see changes in the following respects:

- better collaboration between educational psychology and practical training
- more periods allotted for guidance by the educational psychology lecturers
- a less rigid division between educational psychology and methods
- more liberty in designing training at local level
- greater opportunities for trainees to take part in the planning of their training
- more experimentation
- some form of preliminary practice

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Chapter XI describes an educational psychology knowledge test. In this test the trainee had to solve the problem and also assess its relevance to teacher training.

The results of the educational psychology test and the results of the evaluation of the educational psychology course are enigmatic, but clearly the trainees would like to see the subject put on a more practical footing than was the case during their year at school of education.

Chapter XII desribes an attempt to evaluate the methodology of scientific subjects. The trainees were asked to solve problems of mathematics, physics, chemistry and biology methodology and assess their relevance. The statistical

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analysis revealed that the tests were hetergeneous. This is taken to imply that the methodology of a subject cannot be regarded as a self-contained entity but contains a number of essentially different parts.

The methodology study underlines the need for a firmer definition of the term methodology and for continued research in the form of systematic goal and needs analyses.

Chapter XIII describes a study of the attitudes of trainee teachers to training. The trainees were given an attitude test of the Likert type on two occasions during their training (at the beginning and end of their term at the school of education). The various scales were established by factoral analysis. Insofar as attitudes change during training, they become more critical of education generally and teacher training in particular. This increasingly critical attitude may be due to the training itself (rigid organization and poor co-ordination of the different aspects of training) and it may also be due to the trainees having an excessively idealized view of education at the start of their training. In the latter case the change would be due to the trainee gradually discovering in the practical context that the picture he entertained was inaccurate.

The final chapter (XIV) is devoted to a discussion of the results of the various separate studies and puts forward suggestions for practical measures. This chapter stresses the importance of an integral view of teacher training, i.e. the integration of basic and in-service training.

Practical suggestions are put forward in the following twelve points:

1. Some form of preliminary practice is needed in order to give the trainee practical, virtually non-cognitive experience of young people to build on. This can take place in the classroom and/or in the recreational environment and can be expected to result in experimentation with independent standpoints and opinions concerning principles and

values.

2. Teacher training must include the "inferior knowledge" required for action in the classroom and also concentrate on the inculcation of attitudes conducive to "continual learning".

3. Instead of proceeding unilaterally from teacher to trainee, teaching should for the most part encourage trainees to ask questions which can then be answered or illustrated by teacher and trainees. Once the necessary basic knowledge has been assimilated, e.g. terminology, concepts and methods, teaching must proceed at higher taxonomical levels than those merely concerned with detailed knowledge.

4. A greater element of joint planning on the part of the trainees is desirable. The present system of one theoretical and three practical periods plus a teaching practice term during which only a small number of teachers have any dealings with the trainees is a major obstacle to planning on these lines. The proposed new course of training, with less organizational distinction between the two terms, should make joint planning easier to arrange from the trainees' point of view and should also make it easier to co-ordinate educational psychology, methods and practical training.

5. "The truth" is not known to the teacher trainer, though as a rule he does have access to portions of truth or, more credibly, portions of probability. Consequently it is impossible for him to give detailed instructions covering every possible contingency in the classroom. On the other hand a knowledge of certain facts and theories and general procedures can inculcate sufficient preparedness and endow the trainees with a measure of professional assurance .

6. "Problem-oriented" teaching must be aimed at, and atti-

tudes favouring such teaching should be encouraged.

7. A deliberate effort must bemade to stress the importance of the trainees daring to "be themselves", to be genuine and spontaneous and not to demur at getting involved in debates with their pupils and standing up for their own views.

8. Notwithstanding the above the teacher must be able to maintain a general attitude of acceptance towards the pupils and penetrate and understand the pupils' emotional situation - en empathic attitude.

9. Efforts must be made to establish greater involvement in research and development work during teacher training, so as to encourage "exploratory teaching".

10. More use must be made of role play in teaching.

11. Short episodes of programmed material should be used for subject matter of a pre-eminently factual character.

12. Finally, more use must be made of gruoup discussions in teacher training. The group leader should generally be non-directive, and authentic and topical events ocurring in the course of teaching practice should be discussed and analysed in terms of educational psychology and methods.

13. Trainees would like to have fewer written examinations and more reporting in group discussions (applies to educational psychology).

14. Educational psychology should develop proficiency in critical analysis and should not be concerned with detailed knowledge.

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